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THE NEW ECONOMY IN SPAIN: A REGIONAL ANALYSIS

Abstract

There is no enough evidence about the effects of the new information and communication technologies (ICT) in Spain and how these ICT cause differences between regions. So, the aim of this work is to analyze the regional disparities relative to the new economy in Spain.

In the first part of this work, we will review the literature about the concept and measure of the new economy and the problems derived from the high number of definitions about it that difficult an homogeneous analysis. Despite of the several definitions, new economy refers, basically, to an economic development based in Internet and the technologic knowledge as the main inputs.

Secondly, we review the empirical evidence about the location factors associated with the new economy. As we highlight in this section, the main conclusion is the complexity of the location dynamic related with the new economy because the results of the empirical studies range from the spatial concentration to the spatial dispersion.

In the third section, we analyze the methodology and the empirical results. We collect regional indicators of the new economy in Spain trying to establish if the growth of the new economy in Spain has generated a high spatial concentration. But measuring the new economy at the regional level is even more difficult than it is at the national level because many of the most useful data tend to be nationally oriented. Therefore, it will be used a statistical database with the 28 regional indicators. The 28 indicators in this database are divided into 4 categories about the new economy: ICT industry, ICT services, the knowledge society and the information society. Firstly, we analyse the spatial concentration of the new economy variables in the Spanish territory with the aim of comparing the spatial concentration of the new economy with the spatial concentration of the economic activity.

Next, we will construct a composite indicator that will give us the information about the relative position of a region in the new economy in order to find a variable that reflects the regional development of the new economy. Also, to compare the new economy indicator with the conventional economy it will be used the GDP per capita. As a preliminary result we find that the regional disparities in economic growth are more reduced than the regional disparities in the development of the new economy. So, the spatial concentration of the new economy is higher than the spatial concentration of the conventional economic activity. Also, a second preliminary conclusion is the relationship between a high economic development and a high level of the new economy.

Finally, we conclude with an exposition of the main conclusions highlighting that the Internet and the ICT are an important progress instruments but can generate a growing of the regional disparities. Therefore, the role of the public sector promoting the introduction and development of the information and knowledge society, specially, in the regions with a low position in the new economy characteristics is essential.

THE NEW ECONOMY IN SPAIN: A REGIONAL ANALYSIS

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1. Introduction: concept and measurement of the new economy

The influence of the information and communication technologies (ICT) is the basement of the new economy. The massive use of these technologies and, mainly, the Internet revolution are producing important social and economic transformations that spread over all the industrialized countries.

The "new economy" concept, or "knowledge and information economy", is, nowadays, the new paradigm highlighting the importance and influence of the ICT in a globalization context. Internet is, in general, the origin of the new economy and the new paradigm is developed based in the e-commerce that has changed the way the markets run. Because the several definitions about the new economy, next, we try to approach to this concept.

A first definition establishes the new economy is based in the knowledge, that is, in the education, training, information, science, culture and R&D. In this sense, the education is essential for the development of the new economy because it needs skilled people to produce, offer and demand it.

A second approach to the concept of new economy highlights how it's based in sub-sectors as the "pure" digital goods and services (those based in information and knowledge but not produced by a physical input), mixed (physical goods sell in Internet) and in the ICT industry supporting them.

At last, the new economy can be defined as the combination of the economic growth without inflation, rested on the growth of the labour's productivity due to the new technologies' application. In fact, these are the factors that explain the evolution of the United States' economy during the second half of the 90's. So, United States is the geographical expression of the new economy and the Clinton period it's foregoing.

So, the "new economy" concept describes a changing economic reality, related with the ICT evolution and framed in an international context, highly influenced by the globalization.

About the measurement of the new economy, the developed countries, especially USA and Europe, concentrates most of the Internet traffic however USA is the first country in this question. In the European Union there are important differences between countries, mainly,

between the Nordic countries and the Southern countries to the detriment of these last countries. Spain slows down in the evolution of the new economy inside its territory.

The indicators about the weight of the new economy inside the countries (information technologies' expenditure in relation with GDP, capital human or knowledge's investment, Internet use, e-commerce…) show a shorter distance between the USA and the EU. However, USA is more efficient in transforming the "old economy" to the new economy (De la Dehesa, 2000). This process is not the substitution of the "old economy" by the new economy. The process consists in the traditional enterprises' adaptation to the creation of new information networks reducing, in a significative way, the distance between the producers and the consumers and generating higher profits and reducing costs.

The objective of this introduction was to introduce the concept and measurement of the new economy in order to specify the aim of this work: to analyse the territorial differences in Spain associated to the new economy. In the next part, we review the empirical evidences about the location dynamics of the new economy. In the third part, we review the different methodologies used in similar studies and, in the other hand, we explain the methodology and the results of our empirical analysis. Using several regional indicators (by regions) associated with the new economy, we will analyse if there have been a high spatial concentration of the new economy's development and if there exist differences in the economic growth between regions. Next, we will estimate a synthetic indicator to obtain a new economy's ranking of the Spanish regions. In the fourth part, we will focus on the main public programmes in Spain to promote and develop the Information and Knowledge Society. The role of the public sector is very important because Internet and ICT development can increase the regional differences. Finally, we will expose the main conclusions.

2. Location dynamics in the new economy.

In this part, we will try to analyse the influencing factors in the new economy industry's location. The growing and faster technological improvements occurred in the transport and in the communication, mainly due to the increasing international Internet's use, have reduced the importance of distance and location and how the probability of the disappearance of the city is more real than before, as some authors point out.

Between these authors, we can mention Negroponte (1995) who has announced the elimination of the geographical limits in the information era or Cairncross (1997) who announces "the death of the distance".

But the important thing is to know why the location in the cities could reduce its importance for the ICT industry. The argument is based in how the electronic technologies are destroying the spatial monopolies of information and knowledge accumulated by the cities.

The digital technologies' development has converted activities spatially concentred into activities dispersed in different locations. With good communication tools (videoconference systems or another technologies), the enterprises' departments can be decentralized, geographically speaking. So, an enterprise could have its R&D department in one location, the marketing department in other geographical location and, so on, the production located in another location and all the departments be coordinated and working together without the need of doing physical meetings and all this without meet the head's departments in a concrete geographical location. And the e-commerce allows to the producers to sell to consumer located in any part of the world. So, in many activities it's not necessary to meet people in one place to configure the enterprise's diary work.

In conclusion, the location's decision is, now, less important for the enterprises and this situation has promoted a spatial diffusion process.

However, the enterprises are conditioned by the need for face to face communication and tend to locate where there are high levels of information, knowledge and technology. In the recent years, the evidence shows how the concentration of the high-tech industry is lower but the high-tech services tend to the agglomerate (Devol and Wong, 1999). In the other hand, Wilson (1999) studied how the basic enterprises' activities can be decentralized but the management is concentrated in the headquarters and the production services' enterprises tend to locate in cities with a high number of enterprises' headquarters. This author also highlights how the finance and assurance, enterprises' services or computing and data process enterprises tend to concentrates in big cities.

Despite of the different technologies, there are spatial patterns associated to this sector's development. In this sense, some works have shown how the ICT activities are concentrated in a few locations.

So, there is a general agreement about the spatial location of the digital sector. One of the arguments supporting this is how the city is the best possible location because of its

transport infrastructures and the existence of a skilled labour market. These conditions of cities promote the development of the activities based in the information, the technology and the knowledge.

In conclusion, the empirical evidence explains the trends from the diffusion or dispersion to the spatial agglomeration. The technology development has created the conditions for the diffusion but, at the same time, also influences into a higher concentration in order to obtain a higher efficiency in the knowledge and information's communication. This decentralization has generated a new form of concentration, defined by McKendrick (1998) as "dispersed concentration", where the concentration is based more in the knowledge than in the value chain.

3. The new economy in Spain: a regional analysis.

Nowadays, there have been different works trying to measure the ICT and the Information Society (IS). Together with the high number of IS' indicators, different methodologies have appeared in order to construct synthetic indicators to measure the influence of the new economy in the regions.

For example, Cuadrado and García (2001) set up how the regional differences about the ICT and the IS are much important and higher than the differences between regions using the GDP per capita. And this argument is reinforced when ICT indicators, expenditure in R&D and R&D personnel and other equipment and Internet's use indexes are taken. Analysing the relations between the regional distribution of the ICT activities and the GDP per capital the conclusion is negative. Despite of the Madrid Region or Cataluña have the highest GDP per capita in Spain, it's not a decisive factor in the location of the ICT industries (there are other factors as the country's capital, the location facilities for ICT, the human capital availability…). The conclusion is the ICT are not a regional convergence element in Spain, on the contrary, causes divergence.

Pulido and López (2001) propose a methodology to evaluate the digital economy in the regions. The design of the synthetic indicator is taken from the proposal of the Progressive Policy Institute (PPI) to estimate the introduction of the new economy in the USA's states and it's modified in order to apply to the Spanish regions. With this indicator, the Spanish regions are classified in four groups in relation with the ICT introduction degree, where Madrid and Cataluña are in the first places.

Sánchez and Lazarich (2001) also use this methodology with the intention of offering an approach to the convergence process using the regional R&D expenditure and the annual average growth rates. The convergence hypothesis can be refused because most of the regions with the lower expenditure in relation with the GDP are the same with the growth rates below the average and in Cataluña the R&D expenditure is one of the highest and its growth rate is upper the average.

The objective of our work is to analyse the relative position of each Spanish region in the new economy. Our analysis is based in the opinion about the importance of the development of the Information Society in Spain in order to be competitive and to define the role of Spain in the world.

First to the regional analysis of the Spanish new economy is to construct a statistical database about the ICT and information and knowledge society. But we face to two problems in this task. First, as we have exposed in the first part, there is no an exact definition of the new economy and its international, national or regional measurement. Secondly, some variables used in other new economy's studies are not available at regional level in Spain.

So, considering these restrictions, we have compiled 28 regional variables of the new economy in Spain and can be classified in four groups:

- A first group of variable about the ICT industrial sector includes 10 variables: NE1 (number of ICT enterprises), NE2 (ICT employment using the Industrial Register), NE3 (installed power using the Industrial Register), NE4 (new ICT establishments), NE5 (ICT created employment), NE6 (installed power using the Industrial Movement Statistic), NE7 (ICT invested capital), NE8 (ICT employment using INE as statistical source), NE9 (ICT business volume) and NE10 (number of ICT establishments).
- A second group with 6 variables related with the ICT services sector: NE11 (number of R&D services enterprises), NE12 (R&D services business volume), NE13 (number of computing services enterprises), NE14 (computing services business volume), NE15 (number of telecommunications services enterprises) and NE16 (telecommunications services business volume).
- The third group is composed by 7 variables associated to the knowledge society: NE17 (R&D expenditure), NE18 (R&D personnel), NE19 (R&D researchers), NE20 (industry innovation expenditure), NE21 (ICT innovation expenditure) , NE22 (university students) and NE23 (engineering university students)

- And, finally, the fourth group has 5 variables related to the Information Society and Internet: NE24 (Internet users), NE25 (new Internet users), NE26 (enterprises with webpage), NE27 (active telephone lines) and NE28 (computing equipment of the Regional Administration).

To complete the statistical information, we have added 15 variables about the traditional economy in order to do a comparative analysis: E1 (GDP); E2 (population); E3 (employment level); E4 (industrial enterprises); E5 (industrial employment obtained from the Industrial Register); E6 (industrial sector installed power); E7 (new industrial establishments); E8 (new industrial employment); E9 (industrial sector installed power obtained from the Industrial Movement Statistic); E10 (industrial invested capital); E11 (industrial employment provided by the National Statistic Institute); E12 (industrial sector business volume); E13 (total number of establishments); E14 (number of industrial establishments); E15 (number of non commerce services sector establishments).

Using all these variables and considering their percentage distribution in each one of the Spanish regions, the Herfindahl[1] index has been calculated in order to analyse the spatial concentration of these indicators in Spain. The provided information by this index show how the average value of the traditional economy's spatial concentration is 11.05, so, there's no relevant differences in the concentration of the different analysed variables (see Table 1).

If we analyse the Herfindahl index average of the variables associated with the new economy, 19.83, we can observe a higher spatial concentration. In this case, there are significative differences in the concentration levels depending on the variable used. Upper the average are the average concentration index of the variables about the ICT industry with a value of 23.29 and the average concentration index of the variables about the ICT services with a 22.16 value.

[1] The Herfindahl index is defined as $H = \sum_{i=1}^{17} \left(\frac{t_i}{T} \right)^2 * 100$, where 0<H<100, and t_i is the value of the analysed variable for a concrete region i and T is the national value. A high value of this index shows a higher spatial concentration. If the number of regions is the same in all the variables, the concentration index value is due to the inequalities between those regions.

Table 1. Spatial concentration analysis (Herfindahl Index).

VARIABLES SET	VARIABLE	HERFINDAHL	MEAN	STANDARD DEVIATION	VARIATION COEFFICIENT
ICT INDUSTRY	NE1	12.05	23.29	6.23	0.27
	NE2	23.43			
	NE3	23.02			
	NE4	19.67			
	NE5	30.21			
	NE6	30.59			
	NE7	31.86			
	NE8	18.99			
	NE9	23.90			
	NE10	19.19			
ICT SERVICES	NE11	20.39	22.16	12.16	0.55
	NE12	31.04			
	NE13	17.26			
	NE14	41.75			
	NE15	8.83			
	NE16	13.66			
KNOWLEDGE SOCIETY	NE17	17.78	18.9	12.07	0.64
	NE18	16.23			
	NE19	14.86			
	NE20	15.29			
	NE21	45.71			
	NE22	11.31			
	NE23	11.14			
INFORMATION SOCIETY	NE24	12.48	11.43	1.04	0.09
	NE25	12.10			
	NE26	11.90			
	NE27	10.60			
	NE28	10.06			
NEW ECONOMY	NE1..NE28		19.83	9.58	0.48
CONVENTIONAL ECONOMY	E1	10.97	11.05	0.89	0.08
	E2	10.27			
	E3	10.24			
	E4	10.39			
	E5	11.96			
	E6	10.92			
	E7	11.17			
	E8	12.17			
	E9	10.20			
	E10	9.77			
	E11	12.40			
	E12	12.64			
	E13	10.48			
	E14	11.33			
	E15	10.83			

The concentration index related to the knowledge society and the information society shows an average value of 18.90 and 11.43, below the average. The value about the information society, especially Internet, is the closest to the concentration index of the traditional economy.

The next step of this analysis is the construction of a synthetic indicator in order to establish the relative position of the performance of the new economy in the Spanish regions. For the traditional economy there is a variable to measure the regional development like the GDP per capita, but there's no any variable about the new economy providing this information. So, a synthetic indicator must be constructed.

The methodology used here is based in the analysis by Cutanda and Paricio (1992) who constructed a synthetic indicator of the regional infrastructure level. First, the available new economy variables must be related with another variable expressing the dimension or the weight of one Spanish region (for example, population, GDP, industry…). These relative indicators have to be transformed because are defined in different dimension and to construct the synthetic indicator must be eliminated. To do this, the former data will be standardised taking as reference unit the region with the highest value, 100. This way, the indicators will be put in a homogeneous scale between the values 0 and 100. Next, for each of the four groups above-mentioned, will be calculated this synthetic indicator as the arithmetic mean of the standardised variables. With these four partial indicators the new economy's synthetic indicator (the global indicator) will be calculated as the geometrical mean of the partial indicators. The results are shown in the Table 2.

The global synthetic indicator for the new economy shows how the region in first place is Madrid followed by Cataluña, País Vasco, Aragón, Navarra and Andalucía. The indicator's value for these regions is upper the index average. Madrid is, also, the first region in the four partial indicators. Next, the regions, jointly with Madrid, that have a value upper the average in each of the partial indicators are the following:

- INE1 (ICT industry): Cataluña, País Vasco, Navarra, Aragón and Andalucía.
- INE2 (ICT services): Aragón, Cataluña, La Rioja, Castilla-León, País Vasco and Extremadura.
- INE3 (Knowledge Society): País Vasco, Cataluña, Navarra, Aragón and Castilla-León.
- INE4 (Information Society): Cataluña, Navarra, País Vasco, La Rioja, Aragón, Baleares Islands, Galicia and Valencian Region.

Table 2. New Economy's synthetic indicators by regions. Comparative analysis with the economic conventional development.

REGION	INE1	Rank	INE2	Rank	INE3	Rank	INE4	Rank	INET	Rank	GDP pc	Rank
ANDALUCÍA	26.0	6	41.3	10	43.5	10	77.4	10	43.6	6	54.2	16
ARAGÓN	26.6	5	63.1	2	59.4	5	91.7	6	55.0	4	78.0	7
ASTURIAS	9.5	14	30.2	15	43.4	11	74.9	13	31.1	13	62.7	12
BALEARES	16.9	8	30.9	14	15.8	17	89.3	7	29.3	15	85.5	5
CANARIAS	11.6	13	29.2	16	33.9	14	77.4	11	30.7	14	72.1	8
CANTABRIA	17.0	7	37.6	11	44.9	8	75.2	12	38.3	8	70.3	10
CASTILLA Y LEÓN	13.0	12	50.7	5	49.4	6	73.6	14	39.3	7	68.4	11
CASTILLA-LA MANCHA	15.9	9	42.4	9	34.3	13	65.4	16	35.1	12	58.8	15
CATALUÑA	39.6	2	56.1	3	61.8	3	98.8	2	60.7	2	89.8	3
COM. VALENCIANA	14.3	10	35.8	12	47.5	7	82.4	9	37.6	9	70.5	9
EXTREMADURA	7.8	15	45.2	7	32.6	16	61.5	17	29.0	16	47.5	17
GALICIA	13.3	11	33.0	13	44.7	9	82.4	8	35.7	10	59.0	14
MADRID	100.0	1	100.0	1	100.0	1	100.0	1	100.0	1	100.0	1
MURCIA	5.8	17	27.4	17	33.9	15	66.3	15	24.4	17	61.1	13
NAVARRA	28.7	4	43.7	8	60.3	4	95.2	3	51.8	5	94.7	2
LA RIOJA	7.5	16	52.6	4	41.5	12	94.0	5	35.2	11	82.7	6
PAÍS VASCO	33.0	3	46.5	6	64.4	2	94.8	4	55.3	3	89.2	4
- STATISTICS:												
MEAN	22.73		45.05		47.74		82.38		43.07		73.22	
STANDARD DEVIATION	22.13		17.41		18.38		12.21		18.03		15.21	
VARIATION COEFFICIENT	0.97		0.39		0.39		0.15		0.42		0.21	
- CORRELATION (to GDP pc):												
PEARSON COEFFICIENT	0.64**		0.55*		0.60*		0.90**		0.68**			
SPEARMAN COEFFICIENT	0.60*		0.44		0.59*		0.87**		0.58*			

NOTES: SYNTHETIC INDICATORS, INE1 (ICT INDUSTRY), INE2 (ICT SERVICES), INE3 (KNOWLEDGE SOCIETY), INE4 (INFORMATION SOCIETY), INET (NEW ECONOMY); GDP pc (GDP pc NORMALIZED); *, SIGNIFICANCE LEVEL LESS THAN 0,05; **, SIGNIFICANCE LEVEL LESS THAN 0,01.

From this point we can resume the information provided by the four partial indicators with the aim of construct a typology of the new economy in the Spanish regions. So, a multivariate analysis technique will be used, more specifically an analysis of K-means cluster analysis. This analysis will classify the regions into homogeneous conglomerates where the regions included share similar values of the four partial indicators. The results are shown in the Table 3 and specify the following groups:

- Group 1 (Madrid): it has the highest value of the four analysed indicators.
- Group 2 (Aragón, Cataluña, Navarra and País Vasco): all these regions have values upper the average of the four indicators.
- Group 3 (Baleares Islands and Canary Islands): the values are below the average of the first three indicators (specially the indicator associated with the knowledge society) and the value of the last indicator, related with the information society, is very similar to the average.
- Group 4 (rest of regions): all of them show low values, below the four indicators' average, and their worst position is related with ICT industry.

Table 3. Regional clusters according to synthetic indicators of the new economy: central values of the clusters.

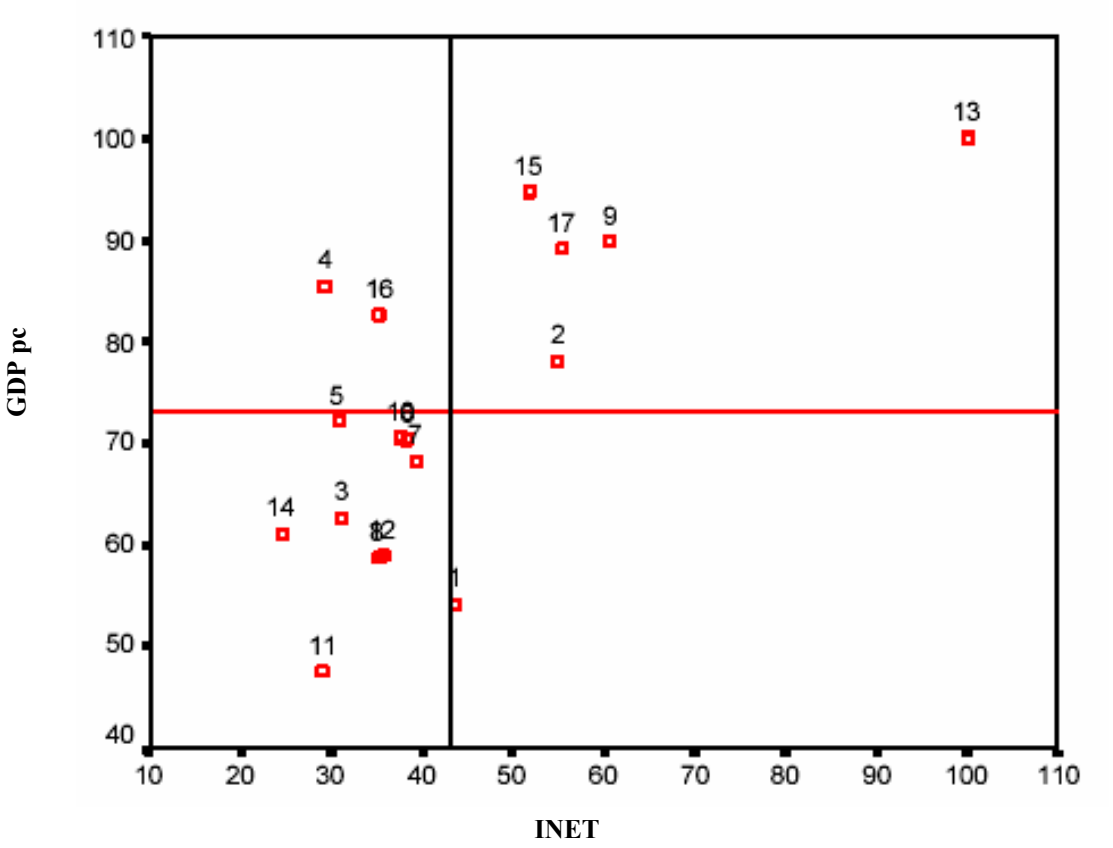
CLUSTER	INE1	INE2	INE3	INE4	REGIONS
1	100.0	100.0	100.0	100.0	MADRID
2	32.0	52.4	61.5	95.1	ARAGÓN, CATALUÑA, NAVARRA, PAÍS VASCO
3	14.2	30.0	24.9	83.3	BALEARES, CANARIAS
4	13.0	39.6	41.6	75.3	ANDALUCÍA, ASTURIAS, CANTABRIA, CASTILLA Y LEÓN, CASTILLA-LA MANCHA, EXTREMADURA, GALICIA, MURCIA, LA RIOJA, COMUNIDAD VALENCIANA

NOTES: SYNTHETIC INDICATORS, INE1 (ICT INDUSTRY), INE2 (ICT SERVICES), INE3 (KNOWLEDGE SOCIETY), INE4 (INFORMATION SOCIETY).

These results can be compared with the economic general economic development (GDP per capita) of the Spanish regions (see Table 2). A first conclusion, using the estimated dispersion statistics, is the higher significance of the regional differences associated to the new economy in front of the difference related with the traditional economy. Most of the new economy's disparities are originated by higher interregional disparities due to the different

development of the ICT industry and the knowledge society. Secondly, the estimated correlation coefficients show the positive and significative correlation between the new economy and the regional development. This correlation is observed through the relation between the GDP per capita and the development of the information society and Internet.

Graph 1. Synthetic indicator of the new economy (INET) and GDP per capita for the Spanish regions.



Keys: 1, ANDALUCÍA; 2, ARAGÓN; 3, ASTURIAS; 4, BALEARES; 5, CANARIAS; 6, CANTABRIA; 7, CASTILLA Y LEÓN; 8, CASTILLA-LA MANCHA; 9, CATALUÑA; 10, COMUNIDAD VALENCIANA; 11, EXTREMADURA; 12, GALICIA; 13; MADRID; 14, MURCIA; 15, NAVARRA; 16, LA RIOJA; 17, PAÍS VASCO.

This conclusion can be proved comparing the position of each region in the new economy and in the traditional economy (see Table 2 and Graph 1). A higher economic development or GDP per capita is associated with a high level of the new economy's development (the global synthetic indicator or INET). Taking the mean values, the regions can be classified as follows:

- Regions with GPD per capita and INET values upper to the average: Madrid, Cataluña, Navarra, País Vasco and Aragón.

- Regions with GPD per capita and INET values below the average: Valencian Region, Castilla-León, Cantabria, Canary Islands, Galicia, Asturias, Castilla-La Mancha, Murcia and Extremadura.
- Regions with GPD per capita upper to the average and INET value below the average: Baleares Islands and La Rioja.
- Regions with GPD per capita below the average and INET value upper to the average: Andalucía.

So, we can conclude the disparities between regions are caused by the higher spatial concentration of the new economy's activities comparing with the traditional economy's concentration. Also, there is a positive correlation, in most of the analysed regions, between the development related to the traditional economic growth and the development due to the new economy.

4. The role of the public administration in the new economy.

The technological development is changing the role of the public administration in the field of the digital economy. The Internet and the ICT are very important tools for the society's progress. But this progress can produce an increase of the regional disparities. So, the public administration must promote the introduction and development of the Information and Knowledge Society, encouraging the investment, helping to the enterprises' creation and playing an active role in the decision's forums. And, also, the public administration has to assure the technological introduction will be equal in all the regions in order to help to the social and territorial cohesion.

The Information Society's development is a basic objective of the Spanish's Government because it's understood as a way to reduce the social disparities and, in the other side, the new technologies are key for the employment and economic growth and the welfare.

Through the INFO XXI or the E-Europe Programmes, the Spanish Government has promoted the introduction of the new technologies in the public administration, the education and culture system, the enterprises, that is, in the whole society.

At the end of the 2002 an Experts Commission was established to analyse the progress of these programmes. With their recommendations the Spanish Government launched a new plan to develop the Information Society: España.es 2004-2005 (Spain.es). This programme

has measures directed to the Public Administration, to the citizens and, specially focused, to the small and medium enterprises (SME). The aim is "to connect" the SME to the new technologies: help to the development of contents and quality services and improve the accessibility to Internet.

The España.es Programme has six areas divided in two sections: there is a vertical section specially focused to concrete sectors and the other section is horizontal and it's focused to the whole society:

- Administración.es (Administration.es): the aim is the promotion of the electronic administration and it's directed to the citizen and enterprises attention's services.
- Educación.es (Education.es): the ICT will be introduced in the education system, so investments in primary and secondary schools will be done in order to provide them of the necessary equipments.
- Pyme.es (SME.es): the objective is to introduce the ICT in the SME, especially in those sectors with a lower implementation of the Information Society.
- Navega.es (Navigate.es): all the citizens must be trained in the use of the Information Society's technologies, so, an easy way to navigate into Internet must be introduced.
- Contenidos.es (Contents.es): it contains supporting measures to create a digital contents' quality offer (Patrimonio.es (Heritage.es)) and a higher Internet's security (Seguridad.es (Security.es)).
- Comunicación.es (Comunication.es): with this area the government's intention is to carry out a communication campaign in order to modify the society's attitude to the new technologies, that is, to create a positive attitude to them.

The initial Programme's budget is Eur 1.029€ million with the following participation: Public Administration (63%), Regions (26%) and the private sector (11%). The three vertical actions (Electronic Administration, Education and SME) concentrate 54% of the total budget (553 million) and the budget for the three horizontal actions (Accessibility and Training, Contents and Communication) is the 46% (476 million). The higher expenditure is focused in the Education action with 241 million followed by the Accessibility and Training with 240 million and the Digital Contents action with 220 million.

The España.es Programme requires the collaboration and the participation of other public organizations. In this sense, the role of the regions is essential for the programme's success. Their collaboration is needed not only as co-finance institutions (participating with

the 26% of the total budget) but as the responsible for the application of several programme's areas.

Table 4. Promotional actions (plans) to the information society in Spain.

REGION	INFORMATION SOCIETY PLAN (literal denomination in spanish)	TEMPORAL FRAMEWORK	BUDGET (mill. €)
Andalucía	Info@landalus: Plan Estratégico para la Sociedad de la Información	2002-2004	367
Baleares	Plan BIT Siglo XXI	2001-2004	n.a.
Canarias	Plan para el Desarrollo de la Sociedad de la Información en Canarias (PDSIC): "Canari@s Digital"	2000-2006	643.7
Cantabria	Plan Estratégico para la Sociedad de la Información en Cantabria	2002-2006	79.7
Castilla-La Mancha	I BORRADOR de Plan Estratégico de Telecomunicaciones y de la Sociedad de la Comunicación	2003-2007	Draft version
Castilla y León	Estrategia Regional para la Sociedad de la Información en Castilla y León	2003-2006	870[1]
Cataluña	Plan Estratégico para la Sociedad de la Información: "Cataluña en Red"	1999-2003	n.a.
Comunidad Valenciana	II Plan de Modernización de la Comunidad Valenciana (Moderniza II)	2000-2003	230.8
Extremadura	Proyecto Global de la Sociedad de la Información en Extremadura: Infodex	Since 1997	3.3[2]
La Rioja	Plan Estratégico para la Sociedad del Conocimiento	2001-2003	n.a.
Murcia	Plan para el Desarrollo de la Sociedad de la Información en la Región de Murcia: "Región de Murcia SI"	2002-2004	140.6
Navarra	Plan de Promoción de la Sociedad de la Información: "Navarra SI"	2001-2003	77.6
País Vasco	Plan Euskadi en la Sociedad de la Información	2001-2003	433.4[3]

[1] PUBLIC AND PRIVATE ECONOMIC RESOURCES FOR THE DEVELOPMENT OF THE ACTIONS OF THE "III PLAN DIRECTOR DE INFRAESTRUCTURAS Y SERVICIOS DE TELECOMUNICACIONES 2004-2006".
[2] PROJECTS SUBSIDIZED IN 2002-2003.
[3] ESTIMATED INVESTMENTS THAT THE PLAN WILL GENERATE IN THE 2002-2006 PERIOD.
SOURCE: eESPAÑA 2003 (WWW.FUNDACIONAUNA.COM) AND AUTHORS ELABORATION.

The Spanish regional governments take awareness about the importance of an effective introduction of the Information Society in their regions and are introducing their own programmes in order to be a complement of the national programme. In the Table 4 are

included the different programmes established in the Spanish regions. We must to highlight that there are some regions without a general Information Society's programme (so, they are not included in the Table 4) but this doesn't imply the introduction of concrete measures (for example, sectorial plans) focused in fields like information or training.

5. Conclusions.

In this work we have exposed four basic questions. First, the lack of a general agreement about a definition of the new economy. This situation has been avoided in this work by reviewing the different definitions provided by the economic literature.

Secondly, the review of the empirical evidence about the new economy's location dynamics supports both arguments about a spatial agglomeration (concentration) and the diffusion (dispersion) of the new economy's activities. However, the decentralization or dispersion has created a new concentration form defined as "disperse concentration".

In third place, the relative ranking of the Spanish regions about the introduction of the new economy in their territories shows a high spatial concentration in some regions and, because of this, higher disparities associated to the new economy, specially, the ICT industry and the knowledge society. Also, it's observed a relation between the traditional economic development and the new economy growth, especially in relation with the introduction of the information society.

Anyway, the new economy is drawing a new regional map in Spain. The relative weakness of the new economy in Spain, compared with other more advanced countries, makes worse because the significative differences between regions. So, to reduce these differences will take a long time.

Finally, the ICT and Internet are important tools for the progress and the territorial and social cohesion but, at the same time, are the origin of the inequalities between those who has access to the new technologies and those who hasn't. Despite of this situation is framed inside the private sector, the role of the public sector is so important because through the public initiatives the equal introduction and development of the information and knowledge can be promoted in the Spanish regions. And, the public support would avoid the appearance of disparities of new technologies' access between the citizens.

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